REMARKS

The Applicant thanks Examiner Taylor for the courtesies extended to the undersigned during a telephone interview conducted on September 14, 2003.

I. Articles Cited in the Information Disclosure Statement

During this interview, Jenny Lee, counsel for the Applicant, informed Examiner Taylor that copies of the articles cited in the Information Disclosure Statement (filed concurrently with U.S. Patent Application Serial No. 10/661,146) were not provided because this application was a continuation of U.S. Patent Application Serial No. 10/323,159 filed on December 18, 2002 (now U.S. Patent No. 6,694,264, Grace) and all of the cited articles had been previously provided during the prosecution of the Grace patent. Examiner Taylor informed Ms. Lee that he does not have access to the cited articles because the file wrapper for the Grace patent is now located in another state. In an effort to expedite the prosecution of this application, the Applicant is mailing an additional copy of the cited articles directly to Examiner Taylor for his kind consideration.

II. Claim Rejections under 35 U.S.C. 102(b) for Claims 1-20

In the Office Action mailed June 17, 2004, the Examiner rejected claims1-20 under 35 U.S.C. 102(b) as being anticipated by Gueziec in U.S. Patent No. 6,031,548. In response to the Office Action and base upon the interview, the Applicant submits an amendment that canceled claims 2, 3, 8, 9, 14, 17, and 18 without prejudice and amended claims 1, 13, 19 and 20. This amendment is taken in the interest of expediting prosecution and there is no intention of surrendering any range of equivalents to which the Applicant would otherwise be entitled in view of the prior art.

The Applicant also traverses the Examiner's rejection based upon Gueziec because, as explained below, Gueziec does not anticipate the invention claimed by the Applicant in this application.

Gueziec involves two methods to display the desired data within a polygonal shape. The first method is used to determine the closest point on a polygonal shape to a query point ("Polygon-query Point Distance Method"). For example, imagine a

map on a computer screen with outlines of houses in your neighborhood. A user clicks in the map to get information (attributes) on one of the houses. If the cursor's location (the query point) is within the bounds of one of the houses, the GIS will return info on that house. However, if the query point is between several houses, the problem arises – on which house should information be displayed? The general answer is: the nearest house to the query point. Gueziec's Polygon-query Point Distance Method provides an algorithm for quickly determining which house is closest to the query point.

Gueziec also developed a method for simplifying the display of 3-D polygonal models based upon user's visual scale ("Scale-dependent Simplification Method"). For example, take a map of a neighborhood on a screen in a GIS. When the user is zoomed out (i.e., as if she was looking at the neighborhood from the vantage of an airplane at 30,000 feet), the map would not even represent the individual houses, because it would clutter the map and the user would just see a mass of points. The streets would be shown, but not the houses. As the user zooms in (e.g., from the vantage of a plane at 10,000 feet), the streets would still be shown, but individual houses would probably be shown as one dot for each house. Again, to try to put in outlines of the houses would clutter the map, making it unreadable. Furthermore, if the map was being transmitted to the user over the web, for instance, one would also pay the penalty of transmitting all that detail from the server to the user that she could not see. As the user zooms in again – to the perspective of a plane flying at 2,000 feet, perhaps all of the houses would be represented in the map, but by identical simple squares placed in the center of each lot. The user would not see details of the houses (a porch in back, a garage to the side, etc.), but she would get increasing information relative to the dots placed on the screen at the 10,000 feet above the ground scale. Finally, zoom in one last time – to the perspective of a plane flying at 500 feet. At this point, the map would put up (if available), what are called "footprints". These are pretty detailed outlines of what the building looks like from above. Cars, garages, patios, etc. would all be outlined and the user would have a pretty detailed picture of what each house would look like from above. When the user is zoomed out, far away from the object, the object must be simplified for transmission and display because the user would not see the detail on the screen any way and, if transmission

time/cost counts, sending all that details to the screen is useless. Accordingly, depending on the scale the user is at, Gueziec's Scale-dependent Simplification Method simplifies the 3-D polygonal objects geometrically, so only that version of the object that the user can reasonably see is sent to the screen. As it is only as much data as she can use visually, it also saves on the time/cost of transmitting all the detail that will not be visible anyway.

Both the Polygon-query Point Distance Method and Scale-dependent Simplification Method disclosed by Gueziec bear no relationship to the Applicant's claims at issue here because none of them refers to calculation of the distance of a query point on a polygonal shape nor to simplification a polygonal shape based upon scale. These Gueziec methods are only useful in an *already constructed* polygonal shape (e.g., a 3-D polygonal model). In fact, Gueziec assumes that the polygonal shape is already constructed and then discloses how to simplify the display and transmission of such shape in a rational, consistent and quick fashion. Gueziec relies on prior art to construct a polygonal shape and then uses his invention methods to display the desired data of such polygonal shape. *See* Gueziec at lines 51-56, col. 4; lines 36-45, col. 6; lines 42-49, col. 10, etc.

In contrast, the Applicant's claims relate only to 3-D irregular polygonal models constructed by his inventive method. See the Grace patent. The Applicant's invention offers no algorithm and/or advice on how such model could be simplified at different scales of examination. Instead, the Applicant's invention and claims address the issue of how to *construct* more precise and better 3-D irregular polygonal models within a GIS platform. The claims provide the inventive steps necessary to construct such 3-D irregular polygonal models within a GIS platform such as, e.g., (a) estimating at least one two-dimensional polygon representing a lateral boundary of said three-dimensional irregular volume; (b) estimating irregular surfaces representing vertical boundaries of said three-dimensional irregular volume; (c) clipping said estimated irregular surfaces with said estimated at least one two-dimensional polygon; (d) constructing multipatches of a network of triangular panels representing the irregular surfaces and sides of said three-dimensional irregular volume to produce said solid three-dimensional irregular volume model within said GIS platform or constructing a grid of regularly spaced polylineZs representing the irregular surfaces and sides of

said reservoir to produce a wire frame three dimensional polygonal model of said reservoir within said GIS platform; and (e) joining attributes of said volume to said model within said GIS platform, wherein said model provides GIS functionality.

Gueziec does not disclose nor is there anything set forth in Gueziec to suggest that it anticipates these inventive steps required to construct such 3-D irregular polygonal models within a GIS platform. In fact, once the models using the Applicant's inventive steps are constructed, a GIS software developer can use Gueziec's methods to query distance and to sample-down and simplify those models for more efficient transmission and display at small scales. For example, ESRI, the main producer of GIS platforms (and the one on which the Applicant's examples set forth in the application are based upon) have display abilities in its GIS platforms that are similar to the Polygon-query Point Distance Method and Scale-dependent Simplification Method of Gueziec. These display abilities provided by ESRI in its GIS platforms are currently being commercially used with the Applicant's models.

In view of the Applicant's amendments and remarks, the Examiner's rejections are believed to be rendered moot. Accordingly, the Applicant submits that the present application is in condition for allowance and requests that the Examiner pass the case to issue at the earliest convenience. Should the Examiner have any question or wish to further discuss this application, the Applicant requests that the Examiner contact the undersigned at (949) 716-7568.

If for some reason the Applicant has not requested a sufficient extension and/or have not paid a sufficient fee for this response and/or for the extension necessary to prevent the abandonment of this application, please consider this as a request for an extension for the required time period and/or authorization to charge

our Deposit Account No. 50-1097 for any fee which may be due.

Respectfully submitted,

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